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INTEROFFICE CORRESPONDENCE

DATE: August 4, 1995

TO: Distribution

FROM: Rick Roberts, Technical Support, Remediation Services, X8508
FAX# 966-8556, Cubicle #315

SUBJECT: VOLUME CALCULATIONS AND REPRESENTATIVE PROCESS OPTIONS FOR THE 903 PAD AND WINDBLOWN SOILS IM/IRA - RSR-001-95

ACTION: Review letter and attachments and attend meeting on August 8

The basis for calculating volumes of material to be remediated for the 903 Pad and Windblown Soils IM/IRA Decision Document is outlined in this letter for review. This basis is linked to the risk and radiation dose assessment within the Remedial Investigation (RI) Report which showed results of $1.7X10^{-04}$ and 18 millirem, respectively. These values are from the highest possible exposure which is in a 30 acre exposure area for AOC#1. The risk is greater than the acceptable risk range of 10^{-04} to 10^{-06} and is attributable to the ingestion of plutonium-239 in surficial soils. The radiation dose associated with this risk is well below the acceptable radiation dose of 100 millirem though.

The Remedial Action Objective (RAO) for surficial soils from technical memorandum #2, "Initial Screening of Remedial Technologies and Identification of Remedial Alternatives for Operable Unit 2", dated May 1995, stated that the TBC of 100 millirem is the RAO for radionuclides in surficial soils at OU 2. Due to subsequent meetings with the Environmental Protection Agency (EPA) and the Colorado Department of Public Health and the Environment (CDPHE), the remediation objectives of 10^{-04}, 10^{-05} and 10^{-06} risk have also been requested for assessment. This request was probably due to the fact that we currently meet the dose based TBC criteria.

There are a number of ways to proceed in order to calculate volumes of surficial soils needing remediation. The first way is to state that no remediation is necessary since the TBC value of 100 millirem is not exceeded. This may be an initial proposal, but it may be prudent to have an alternative proposal since EPA and CDPHE have already said that they want to see remediation alternatives assessed against the 10^{-04}, 10^{-05} and 10^{-06} risk levels. The following strategy assumes that the "No

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Action" scenario for the decision document is not approved.

There will be four cleanup levels assessed in the decision document so that comments from EPA and CDPHE are considered. These cleanup levels will be based upon a radiation dose of 100 millirem as well as the 10^{-04}, 10^{-05} and 10^{-06} risk levels. Since contaminants other than plutonium-239 are present within the risk range, remediation will be assessed for these other contaminants as well. There will be two exposure scenarios assessed at the four cleanup levels. An office worker scenario will be assessed within the perimeter fence surrounding the 903 lip area. An open space scenario will be assessed outside of the perimeter fence. These exposure scenarios are the most appropriate for the area given the recommendations of the Rocky Flats Future Site Use Working Group.

Surface soils have historically been defined as the top 5 cm of soil. In the 903 Pad lip area though, there was sand spread over contamination in surficial soils to reduce air dispersion. The RI Report data show that there is a spike in plutonium-239 concentrations right under this sand layer at approximately 12 cm below the ground surface. Due to this spike in plutonium-239 concentration, I propose that two separate depths be assessed within the 903 Pad for volume calculations; 20 cm and 40 cm. Performing remediation to a 20 cm depth would allow further characterization of the plutonium-239 concentrations before subsequent remediation activities. This may save resources due to decreased volumes of soils needing remediation. Plutonium-239 concentrations drop near background concentrations at 40 cm. All surface soil volumes calculated for areas outside of the 903 lip area will use a depth of 15 cm since this is the smallest practical depth for excavation.

In the surficial soil characterization in the OU 2 RI Report, samples were composited on a 2.5 acre or a 10 acre basis. After remediation alternative have been proposed based on the current surficial soil sampling program, it may be prudent to institute a limited field program so that surficial soil contamination levels are delineated on a finer basis. This may again save resources since smaller remediation areas may be realized. This limited field program will be proposed as part of the decision document. No field program will be proposed if capping is the preferred alternative.

Representative Process Options (RPO) to be analyzed within the decision document have also been preliminarily selected based on effectiveness, implementability and cost. Technical Memorandum #2 was used as the basis for this selection. RPOs are attached to this letter for review and comment. RPOs will be evaluated with respect to the surficial soil volume estimates to be assessed above.

Due to work currently proceeding, a meeting is scheduled to be held at Interlocken in the large west conference room on Tuesday, August 8 at 2PM. We will discuss the volume calculation strategy as well as the attached RPOs at that time so that the 903 Pad and Windblown Soils IM/IRA Decision Document can proceed. I look forward to meeting with you.

Attachment:
As Stated

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